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TOURIST LOYALTY AND URBAN E-SERVICES: A COMPARISON OF BEHAVIOURAL IMPACTS IN LEIPZIG AND AMSTERDAM

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Abstract

Tourism is often clustered around attraction poles, such as cultural cities or nature resorts. Proper information on a tourist destination is critical to convince potential visitors. In recent years, the use of e-services for tourism is gaining much importance. Using Structural Equation Models, this paper analyses the link between motivation, satisfaction and loyalty on the one hand, and access to – and use of – tailor-made e-services on the other hand. Two test cases are used to investigate the validity of our analytical framework, viz. Leipzig and Amsterdam. First, empirical results for the city of Leipzig are presented, and next compared with findings from similar studies performed for Amsterdam. An important result of this study is that, the visitor's satisfaction with intangible aspects of the city has a positive correlation with the loyalty of the tourists. Consequently, planning tourism development presupposes a balanced approach to the different attractiveness factors of urban life.

Keywords: Loyalty, e-services, tourist destination, motivation, satisfaction, Structural Equation Model

1. The Urban Force Field of Tourism

Tourism is not a geographically uniformly spread activity, but is mainly clustered around dedicated attraction poles, such as cultural cities, entertainment centres or tourist resorts. World-wide, tourism has always had an urban orientation (including neighbouring amenities). Ashworth and Page (2011) argue that urban tourism is partly related to urban transport hubs and gateways (such as airport and harbours), and partly to the multifunctional portfolio of entertainment opportunities offered by urban agglomerations. Nowadays, tourism has become a major export industry of many countries and regions, and consequently we witness in many countries the emerging phenomenon of destination competition, where tourist destinations fight for the favours of visitors (see e.g. Daskalopopoulou and Petrou 2009; Dwyer and Kim 2003; Enwright and Newton 2004; Cracolici et al. 2008). This has resulted in new tools in tourist management, in particular, marketing tools, e-services or loyalty programmes (Buhalis 2000). All such tools serve to attract tourists and to seduce them to make a (return) visit.

To please tourists, it is important to offer a package of services that matches supply and demand of tourist services. Tourist amenities have to be in agreement with the visitors' motives. If tourists are not satisfied with the quality of services, they will not return and – even worse – spread negative information on the place they have visited (see e.g. Chen and Chen 2010; Chi and Qu 2008; Lee 2009; Yoon and Uysal 2005). Proper information on a tourist destination is critical to convince potential visitors to come, and in this regard, the use of e-services is gaining more and more importance (see e.g. Aldebert et al., 2011; Buhalis and Law, 2008). Professional information provision in a digital world is increasingly key to a high tourist performance. Thus, there is a logical link between motivation, satisfaction, and loyalty on the one hand, and use and appreciation of and access to tailor-made information on the other hand. Furthermore, it is possible to identify two different time-frames in these linkages: while e-services will predominantly be used before and during the visit, thus potentially increasing the current performance of the destination, the ultimate link between satisfaction and loyalty is a measure of future performance of tourist cities.

Cities act essentially as intermediate spatial agents in the pluriform tourist market. They often house a broad collection of amenities, while they also have to attract a heterogeneous group of visitors who wish to enjoy a broad package of tourist goods. Our study aims to investigate in a systematic way the force field of urban tourism, with a view to the empirical identification of drivers and satisfaction mechanisms of tourists. To test this conceptual approach, an operational analysis framework is needed. A concise theoretical model of these relations can be found on the right side of Figure 1. The case study at hand addresses the city of Leipzig, and prompts the design of a Structural Equations Model (SEM) to map out the drivers and impacts of various tourist

amenities in the city. A similar study was previously undertaken for a totally different European city, viz. Amsterdam (see Romão et al. 2012). The present paper aims next to analyse similarities and differences in the research design and findings from these two cities by means of a systematic comparative analysis. This comparison then serves to identify structural differences in tourist characteristics of different cities and the way in which these affect the satisfaction and loyalty of diverse tourist groups as a measure of the future competitiveness of these destinations.

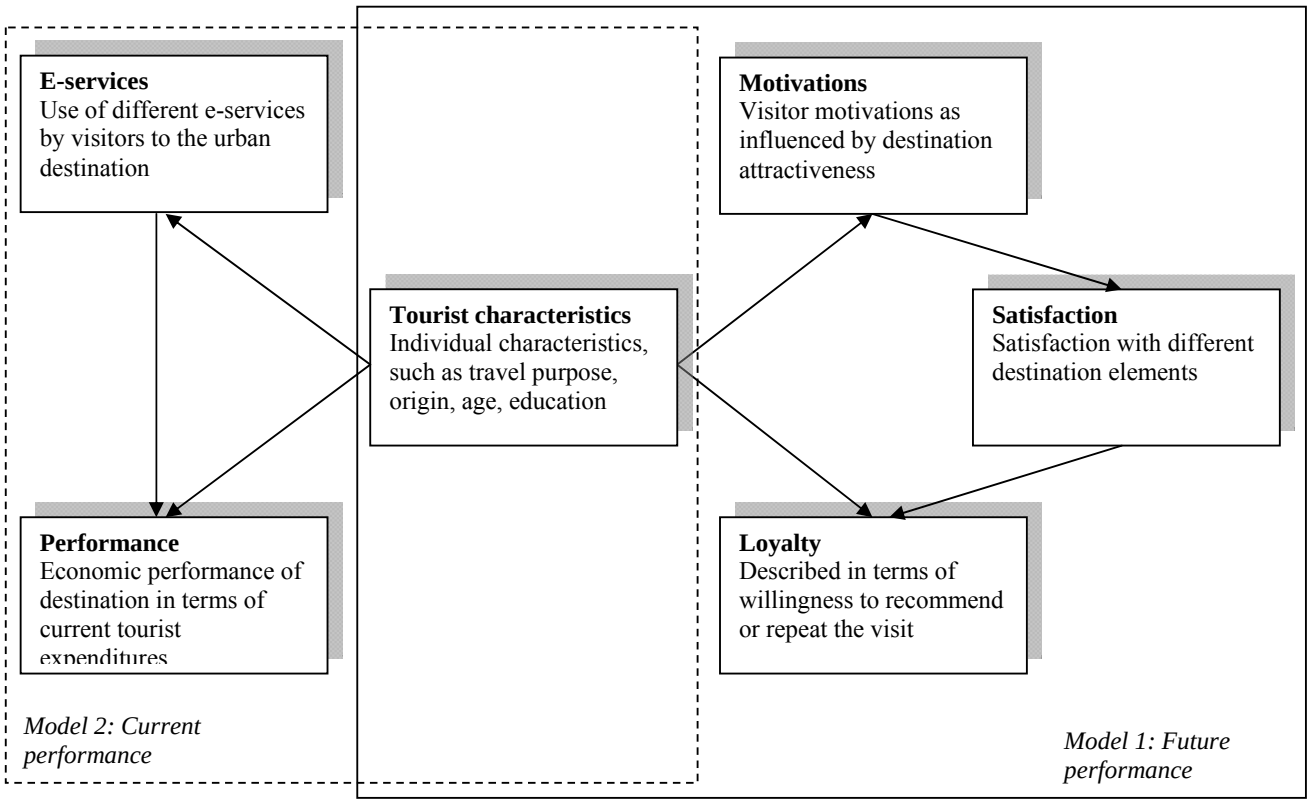

Figure 1: Conceptual model of current and future destination performance

Furthermore, on the basis of a similar dataset, a previous research (Neuts et al. 2012) has identified the impact of e-services on local expenditures in the city of Amsterdam as an immediate economic performance measure. By testing and analysing a similar theoretical model (see the left side of Figure 1) on the dataset of a different destination, insights can be provided on the general nature of our case study findings.

The paper is organized as follows. Section 2 will describe the methodology used in our study. Then, in Section 3 we will present the findings from the core study undertaken for Leipzig, while in Section 4 the main results from the previously undertaken study for Amsterdam will be summarized and systematically compared to the research findings of Leipzig. Finally, Section 5 will offer some concluding remarks.

2. Methodological Framework

In this study, we use data that was collected among urban visitors in 2007. The total dataset consisted of 653 national and international tourists in Leipzig, Germany[1]. Important variables that are considered in this study are: personal characteristics of the tourists, their planned activities as divided over different categories, their satisfaction rates with diverse characteristics of the destination, their destination loyalty in terms of word-of-mouth and return incentive, their on-site expenditure, and the use of e-services. Since both the income and expenditure variables included a considerable number of missing values (266 and 128, respectively), these missings were analyzed and imputed through a regression estimation. The final dataset then consisted of 544 observations for the model on destination loyalty, and 480 responses for the model on e-services and expenditure. The purposes, variables and methods adopted in this study are similar to those that have been applied to the city of Amsterdam. A general overview of the variables used in both models can be found in Romão et al. (2012) and Neuts et al. (2012).Structural Equation Modelling was applied in both models as the main econometric tool.

In the case of tourist motivations and satisfaction with the destination, as well as loyalty towards the destination, this SEM approach consisted of a confirmatory factor analysis and a structural model able to capture the expected existence of higher-order underlying dimensions (Hair et al., 1998; Mulaik and Millsap, 2000). The probable multidimensionality of travel motives and satisfaction was implied by the results of an explanatory factor analysis on the tetrachoric correlation matrices (Table 1).With a cumulative explained variance of 57 percent, the motivational factor seemed to be divided into (1) an environmental motivation incorporating the visiting purpose of architecture and landscape, (2) a cultural motive constructed from the activities concerning museum visits and cultural events, (3) a commercial motive based on interests for shopping, nightlife, and atmosphere. It can be seen that this result does not show a significant correlation of the business motive with any of the three factors. This indicates a separation of this motive from the other activities and leads to the inclusion of a fourth, singular business factor in the structural model. The principal component analysis of satisfaction with different elements of the destination yielded a two-factor solution with a total explained variance of 64 percent. The first factor (1) is concerned with the satisfaction of tangible elements (architecture, monuments, museums, urban landscape, and cultural events), with factor two (2) measuring satisfaction on intangible destination elements (traditions, customs, and knowledge).

[1] The data collection took place within the Sixth Framework Programme of the European Union (FP6 EU) project, "Integrated e-Services for Advanced Access to Heritage in Cultural Tourist Destinations" (ISAAC) between August and November 2007. This project was also responsible for the data provided for Amsterdam in a previous study and was thus directly comparable.

Table 1: Varimax Rotated Component Matrix of Principal Component Analyses

Items	Factors 1	2	3
Motivations			
- Activities planned architecture	**.812**	-.028	.001
- Activities planned museums	-.005	**.816**	-.054
- Activities planned landscape	**.635**	.037	-.229
- Activities planned cultural events	-.012	**.756**	-.037
- Activities planned shopping	-.247	.158	**.661**
- Activities planned business	-.449	-.432	.057
- Activities planned nightlife	-.145	-.310	**.708**
- Activities planned atmosphere	.507	-.087	**.633**
Satisfaction			
- Appreciation of architecture	**.890**	-.018	
- Appreciation of monuments	**.668**	.328	
- Appreciation of museums	**.749**	.222	
- Appreciation of urban landscape	**.645**	.124	
- Appreciation of cultural events	**.557**	.315	
- Appreciation of traditions	.225	**.806**	
- Appreciation of customs	.139	**.893**	
- Appreciation of knowledge	.197	**.855**	

For the second model of interest (as shown on the left side of Figure 1), a higher-dimensional factor in relation to the combination of e-services is not expected. Since multicollinearity diagnostics did not indicate a clear collinearity problem (with Variance Inflation Factors between 1.450 and 1.831, and tolerance values between 0.546 and 0.690), all seven e-services were treated independently in order to identify a larger number of possible relationships. Since the model of Figure 2 does not incorporate any latent constructs, the structural equation model is simplified into a path model, limiting Mulaik and Millsap's (2000) four-step modelling approach to two steps: (a) identifying the structural path model, and (b) testing a number of nested models.

3. Empirical Results

After the previously described explanatory factor analysis, the 'Future performance' model of Figure 1 proceeds by conducting a confirmatory factor analysis to test the adequacy and validity of the measurement items. The measurement model was constructed from the personal characteristics, as well as the principal components of motivations (4 factors) and satisfaction (2 factors). Destination loyalty was measured as a factor of two items: returning intention and recommendations given to others. Following Garson (2011) a correlation was initially assumed between all latent and unidimensional model variables. While the initial measurement model did not have acceptable [2] model fit values [3], the confirmatory factor model could be improved

[2] For a discussion of thresholds, see Wheaton et al. (1977), Tabachnick & Fidell (2007), and Steiger (2007).

significantly by correlating measurement errors between a number of motivational and satisfaction items and deleting the item 'atmosphere' which had a standardized regression weight far below the 0.30 level (.016). Apart from the χ^2-value = 388.789,which is found to be biased in cases of higher sample sizes, departures from multivariate normality, and model complexity (Schumacker and Lomax, 2004), all other model fit indices now increased/decreased to acceptable values[4].

Next, the structural model was fitted to confirm the theoretical relationships of Figure 1. As a first step, a complete regression model was tested on path significance, with model fit indices approaching acceptability[5]. A total of 20 hypothesized relationships was found significant on a 95% confidence level, with a further 5 paths being significant on a 90% confidence level. In the final model, which was achieved by the stepwise deletion of non-significant paths, all model fit indices are acceptable (see Figure 3).

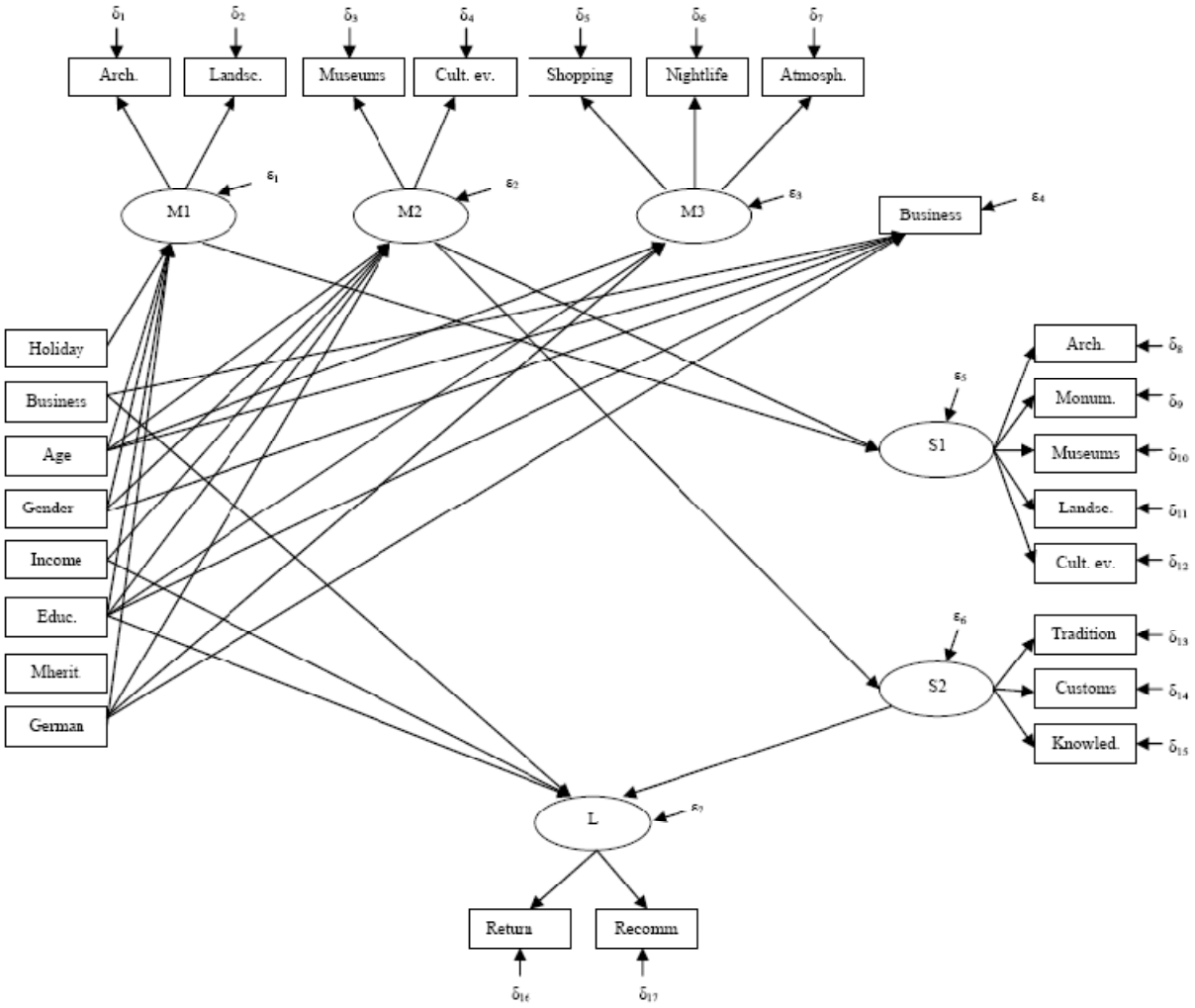

Figure 3: Structural Model for Destination Loyalty in the City of Leipzig

[3] χ^2-value = 798.3, Df = 203, p-value = .000; χ^2/Df = 3.932, RMSEA = .073, and CFI = .802
[4] χ^2-value = 388.789, Df = 169, p-value = .000); χ^2/Df = 2.301, RMSEA = .049, CFI = .926
[5] χ^2/Df = 2.527, RMSEA = 0.053, CFI = 0.899), apart from the χ^2-value = 495.263 (Df = 196, p-value = .000

Note: For reasons of readability, covariances are not shown in the model. Only significant paths are shown. M1 = Environmental Motive, M2 = Cultural Motive, M3 = Consumption Motive, S1 = Satisfaction Tangible, S2 = Satisfaction Intangible, L = Loyalty, χ^2 (195) = 443.488, p = .000, χ^2/Df (2.274), RMSEA = 0.048, CFI = 0.916.

In Table 2 an overview is given of the unstandardized regression estimates for the relationship of Figure 3. The estimation method used is based on maximum likelihood, coupled with bootstrap estimated 95% confidence intervals. According to these findings, tourists with a clear holiday purpose are more likely to be influenced by the architectural and urban landmarks in their decision to visit Leipzig. Older respondents are, in general, more motivated by both the environmental and the cultural aspect, while, conversely, the nightlife and shopping, and the business purpose are seen as less important by higher-age groups. From the data it seems that women are significantly more motivated by the urban environment and the cultural aspects, and less by the business motive. As could be expected from other studies, a higher education level increases the tourist interest for cultural destination aspects, as well as local architecture and urban design. Higher-educated respondents were also more likely to visit Leipzig out of a business motive. On the other hand, a higher level in education appears to coincide with a lower level of interest in shopping and nightlife. A final factor that was found to influence all travel motives was the difference between national and international tourism. Tourists from within Germany were significantly more motivated by the aspects of urban environment, consumption, and business. In contrast, culture was less likely to be a main travel motivation. Finally, the negative coefficient of income on the cultural motive implied that a higher income decreases the chance that culture is a reason for a tourist visit.

From the relationship between motivations and satisfaction, only a limited number of proposed paths were found to be significantly related. First of all, the environmental travel motive (i.e. tourists interested in the architecture and urban landscape) was positively related to satisfaction with tangible heritage. This seems to suggest that tourists with an interest in tangible heritage are satisfied with the urban heritage elements found in Leipzig. Secondly, a higher cultural motivation increases the satisfaction on both the tangible and intangible heritage present. However, these results have to be interpreted carefully since the bootstrap estimated 95% confidence intervals indicate that the relationship between the environmental motive and satisfaction with tangible heritage, as well as the relationship between the cultural motive and satisfaction with intangible heritage, might not be significantly different from zero (i.e. zero is part of the lower and upper bound interval in these cases).

Finally, the evidence-based relationship between the personal characteristics, destination satisfaction, and loyalty to the destination is investigated in Table 2. Only four relationships were found significant, albeit two of them only interpretable on a 90% confidence level. According to

these findings, business as the main nature for travelling, income, education level, and satisfaction with the intangible elements of the destination all lead to a higher loyalty towards the destination.

A final note can be made about potential indirect effects of the travel motives (via satisfaction) on destination loyalty. The results of this analysis indicate an indirect positive relationship between the cultural (.002) and the consumption (.022) motive, while the environmental travel motive (-.011) appears to have an indirect negative influence on the tourist loyalty.

Apart from the structural model between destination loyalty and different tourist characteristics, a second interest of this paper liesin the use of e-services by different tourists and the potential of these e-services to increase tourist expenditure as a measure of 'Current performance'. While the initial model did not show adequate fit indices[6], the model was made more parsimonious on a stepwise basis, based on the t-test values of non-significant regression paths. The subsequent final path model, as shown in Figure 4, had satisfactory fit indices on.

Table 3 gives an overview of the significant paths between the personal tourist characteristics and the seven e-services: interactive map, personalized information, booking services, journey planners, e-forums, virtual tours, and interactive games. The main holiday motive is positively related to the importance placed on the availability of interactive maps, e-forums, and virtual tours. It thus seems to indicate that respondents with a leisurely travel motive are increasingly likely to turn to these sources in order to find relevant information about the destination and the specific sights of interest. As could be expected, age is more negatively related to e-service adaptation, with a significant negative impact of higher age groups on the use of interactive maps and interactive games. German tourists are found to be less likely to value personalized information, while this group does turn to journey planners to plan their trip. Income and gender both affect the use of booking services. A higher income increases the demand for online booking services, while female tourists are found to be more likely to use these services than male tourists (albeit only at a 90% confidence level). Finally, the level of education negatively impacts the importance placed on three e-services: e-forums, virtual tours, and interactive games. It is found that these services are more valued by lower educated tourists and might thus be considered to increase accessibility of information to these groups.

[6] χ^2-value = 222.782 with Df = 20 and p-value = .005, χ^2/Df = 11.139, RMSEA = 0.145, CFI = 0.880

Table 2: Unstandardized Path Estimates for Structural Model of Destination Loyalty

	Unstandardized estimates *(SE)*	Lower bound	Upper bound
Motive Environment			
> Nature holiday	.163 *(.038)***	.053	.290
>Age	.061 *(.015)***	.030	.095
>Gender	.054 *(.021)***	.018	.104
>Education level	.036 *(.009)**	.015	.063
>German nationality	.089 *(.030)***	.043	.152
Motive Culture			
>Age	.088 *(.025)***	.025	.136
>Gender	.115 *(.037)***	.037	.188
>Income	-.031 *(.012)**	-.058	-.005
>Education level	.047 *(.015)***	.020	.081
>German nationality	-.246 *(.051)****	-.360	-.134
Motive Consumption			
>Age	-.109 *(.022)****	-.156	-.060
>Education level	-.023 *(.011)**	-.051	-.002
>German nationality	.131 *(.042)***	.044	.231
Motive Business			
>Nature business	.417 *(.032)****	.261	.576
>Age	-.018 *(.010)*°	-.036	-.002
>Gender	-.031 *(.016)**	-.065	-.001
>Education level	.011 *(.006)*°	.002	.022
>German nationality	.053 *(.022)**	.012	.092
Satisfaction with tangible			
> Environmental motive	.559 *(.240)**	-.151	1.313
>Cultural motive	.612 *(.178)****	.064	1.472
Satisfaction with intangible			
>Cultural motive	.373*(.215)*°	-.195	2.356
Destination loyalty			
> Nature business	.133 *(.062)**	.019	.291
>Income	.020 *(.009)**	.002	.043
>Education level	.021 *(.011)*°	.000	.054
>Satisfaction with intangible	.038 (.025)°	-.005	.112

Note: ° p-value < .1, * p-value < .05, ** p-value <.01, *** p-value <.001

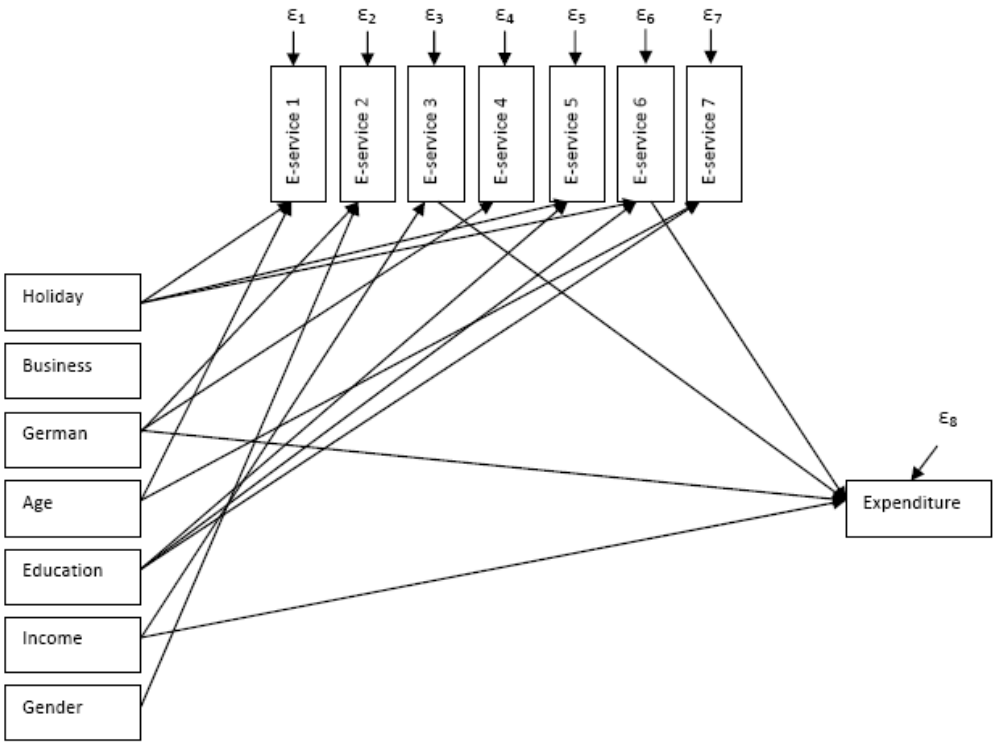

Figure 3: Structural Model of E-services

Note: For reasons of readability, covariances are not shown in the model. Only significant paths are shown. χ^2 (59) = 104.420, p = .001, χ^2/Df (1.770), RMSEA = 0.040, CFI = 0.973.

Table 3 also incorporates the significant paths between the personal characteristics, the e-services and the total expenditure of the tourists. Two personal characteristics (both on 95% confidence level) and two e-services (both on a 90% confidence level) appear to be statistically related to tourist expenditure in Leipzig. Domestic tourists spend significantly less at the destination as compared to international tourists. This is sensible since their transportation cost is lower and a large group of domestic tourists might only visit the destination as day visitors. Conversely, a higher income increases the expenditure on site. Finally, of the seven e-services, two were related to expenditure, even though these results have to be treated carefully, as seen from the bootstrapped 95% confidence bounds. The results seem to suggest that the use of booking services and the availability of virtual tours increases the costs made by tourists.

Finally, apart from these direct relationships, an indirect influence on tourist expenditures can be found for the personal tourist characteristics through their connection with e-services. As such, gender (10.505) and income (5.305) have apparently a further indirect positive influence on expenditure through their relationship with booking services, indicating that women tend to spend more on holidays than men, while a higher income leads to higher expenditure patterns. Similarly,

the education level has an indirect positive influence (11.697) through the e-service virtual tours, while the holiday motive was indirectly negatively related to expenditure (-4.185).

Table 3: Unstandardized Path Estimates for E-services Model

	Unstandardized estimates *(SE)*	Lower bound	Upper bound
Interactive map			
> Nature holiday	.679 *(.213)***	.292	1.139
>Age	-.137 *(.060)**	-.252	-.023
Personalized information			
>German nationality	-.255 *(.107)**	-.462	-.054
Booking services			
>Income	.085 *(.029)***	.026	.140
>Gender	.168 *(.101)*°	-.025	.376
Journey planners			
>German nationality	.252 *(.122)**	.015	.502
E-forums			
>Nature holiday	.255 *(.133)**	.069	.463
>Education level	-.188 *.033)****	-.251	-.125
Virtual tours			
>Nature holiday	.502 *(.163)***	.192	-.143
>Education level	-.071 *(.037)*°	-.143	-.001
Interactive games			
>Age	-.143 *(.052)***	-.250	-.034
>Education level	-.126*(.031)****	-.188	-.068
Expenditure			
> German nationality	-883.894 *(96.862)****	-1302.304	-578.283
>Income	58.270 *(20.707)***	18.327	105.681
>Booking services	62.638 *(32.454)*°	-6.505	180.289
>Virtual tours	57.312 *(33.728)*°	-13.842	118.630

Note: ° p-value < .1, * p-value < .05, ** p-value <.01, *** p-value <.001

4. Discussion

The results obtained in this analysis will be compared with those obtained in a largely similar, previous study, using the same methodology, for the city of Amsterdam (see Romão et al. 2012). Table 4 gives a comparative overview between the relationships that were found significant in Leipzig and Amsterdam concerning the 'Future performance' of the destinations. The table can be read as follows: a '+' sign indicates a significant positive relationship, a '-' sign a significant negative path, a '0' can be interpreted as non-significant and a 'na' value indicates that the particular path was not investigated in the specific destination. The values of the Leipzig study are

given on the left side of each cell, while the relationships found for Amsterdam are given on the right side.

A first observation that can be made concerns the different structure of the travel motivations in both destinations. In Amsterdam it was possible to identify a general motivation for the cultural aspects of the city (including architecture, museums, urban landscape, cultural events and atmosphere), thus effectively combining M1 and M2, while in Leipzig these motivations were distinct, with one group of tourists being more concerned with the 'environmental' characteristics of the city - architecture and landscape – and the other one motivated by visits to museums and cultural events. This also had a clear effect on the structure of the satisfaction components, even though in both cases two major domains were identified, viz. intangible elements (related to traditions, customs and knowledge) and tangible elements (related to architecture, monuments, museums and urban landscape). In contrast to Amsterdam, in the case of Leipzig, cultural events are included among the tangible elements. This suggests that while tourists in Leipzig view the cultural events as part of the broader, more tangible, cultural aspects such as architecture and city landscape, the cultural events of Amsterdam are recognized as a more intangible and separate tourist motive, distinguished from the bricks and mortar aspect of culture.

Table 4: Comparison between significant relationships of 'Future performance' model

Leipzig / Amsterdam		Intermediate and dependent variables						
		M1	M2	M3	M4	S1	S2	L
Independent and intermediate variables	Holiday	+ / na	0 / +	0 / +	0 / 0			0 / 0
	Business	0 / na	0 / 0	0 / 0	+ / +			+ / 0
	Age	+ / na	+ / 0	- / -	- / 0			0 / 0
	Gender	+ / na	+ / 0	0 / -	-/ 0			0 / 0
	Income	0 / na	- / 0	0 / 0	0 / +			+ / -
	Educ.	+ / na	+ / 0	-/ -	+ / 0			+ / +
	Mherit.	0 / na	0 / +	0 / 0	0 / 0			0 / -
	German / Dutch	+ / na	- / -	+ / -	+ / 0			0 / -
	M1					+ / na	0 / na	
	M2					+ / +	+ / +	
	M3					0 / -	0 / 0	
	M4					0 / 0	0 / +	
	S1							0 / -
	S2							+ / +

Note: M1 = Environmental Motive (not available in the Dutch case, where M1 and M2 are combined), M2 = Cultural Motive, M3 = Consumption Motive, M4 = Business Motive, S1 = Satisfaction Tangible, S2 = Satisfaction Intangible, L = Loyalty, + = significantly positive, - = significantly negative, 0 = non-significant, na = not available

As could be expected, it is possible to identify clear differences by comparing the relationship between the characteristics of tourists and their motivations to visit the two cities. In particular, we find:

- while cultural motives are important for tourists with a holiday purpose in both cities(in Leipzig, this motivation is mostly oriented towards architectural and urban characteristics), a shopping motive can only be identified in Amsterdam, thus indicating that Leipzig is not seen as a major recreational shopping destination.
- when nationality is taken into account, Amsterdam is more seen as an international shopping location, with a lower significance for local tourists, while, on the contrary, shopping in Leipzig is tied significantly to national tourism.
- in both cities, higher education is connected with a lower motivation for shopping;
- in Amsterdam it is possible to identify a gender difference in the motivation for shopping, with women giving more importance to this item, while in Leipzig women are mostly motivated by cultural aspects and the urban environment;
- older tourists visiting Amsterdam are less motivated by cultural reasons, contrary to what is found in Leipzig (a possible explanation may be the image of both cities and the cultural resources available, with Amsterdam being associated with a liberal lifestyle, and a youthful atmosphere). In both cities, motivation for shopping is lower for higher age categories;
- in Amsterdam, we may identify a close positive relation between the level of income and the business motive to visit the city, while in Leipzig we find a relation between the business motivation and the level of education. On the other hand, there is a negative relation between age and the business motive for travel to Leipzig, in contrast to the importance of Amsterdam as a global finance center (attracting senior, high income, business people).

Regarding the relation between the motivations of tourists and their satisfaction with the different attractiveness elements of the city, it is possible to verify that, even if shopping is identified as a major factor of attraction in Amsterdam, tourists motivated by this aspect register lower levels of satisfaction with the architecture, monuments, museums and urban landscape. In both cities, cultural motivation increases the satisfaction with both tangible and intangible heritage. Nevertheless, it is important to notice that the cultural motive for the city of Leipzig refers only to museums and cultural events, while in Amsterdam it refers to a broader cultural concept, including architecture, urban landscape and atmosphere. In fact, tourists visiting Leipzig motivated by the 'environmental' cultural aspects (architecture and landscape) registered higher levels of satisfaction with the tangible heritage of the city.

Finally, regarding the loyalty (intention to recommend to friends or to repeat the visit) to these destinations, there are also important differences. In Amsterdam, tourists with higher education levels and lower levels of income tend to be more loyal (which is probably related to the young, high qualified, tourists visiting the city). Conversely, in Leipzig, a positive relation can be found between loyalty, business as main motive for travelling, income level, and education level, indicating that the student segment of the tourist group might be of less importance here. In both destinations, it was found that a higher satisfaction with intangible heritage creates more loyalty, while visitors more satisfied with tangible heritage registered lower (in the case of Amsterdam) or not significantly different (in the case of Leipzig) levels of loyalty. Finding this relationship in both datasets might indicate that an increased tourist loyalty is primarily achieved by offering tourist a satisfying non-tangible product. People who are satisfied with the deeper cultural aspects of the destinations and the way of life at such a location have an increased chance of returning than tourists who are looking for a tangible experience. This group might be more footloose, looking for different experiences and not considering it important to revisit the same museums, monuments or cityscapes.

Table 5 gives a similar overview concerning the relationships between the independent, intermediate and dependent variables of the model concerning the 'Current performance' of both destinations. The table can be read in a similar way as Table 4.

Table 5: Comparison between significant relationships of 'Current performance' model

Leipzig / Amsterdam		Intermediate and dependent variables							
		E1	E2	E3	E4	E5	E6	E7	Ex.
Independent and intermediate variables	Holiday	+ / +	0 / 0	0 / 0	0 / 0	+/ 0	+/ 0	0 / 0	0 / 0
	Business	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / +	0 / 0	0 / 0
	Age	- / -	0 / -	0 / -	0 / 0	0 / -	0 / 0	-/ -	0 / 0
	Gender	0 /0	0 / 0	+ / 0	0/ 0	0 / 0	0 / -	0 / -	0 / 0
	Income	0 / 0	0 / 0	+ / 0	0 / +	0 / 0	0 / 0	0 / 0	+ / +
	Educ.	0 / +	0 / -	0/ +	0 / 0	- / -	- / -	- / -	0 / -
	German / Dutch	0 / -	- / -	0 / -	+ / 0	0 / 0	0 / -	0 / 0	- / -
	E1								0 / 0
	E2								0 / 0
	E3								+ / 0
	E4								0 / 0
	E5								0 / -
	E6								+ / +
	E7								0 / 0

Note: E1 = Interactive Map, E2 = Personalized Information, E3 = Booking Services, E4 = Journey Planners, E5 = E-forums, E6 = Virtual Tours, E7 = Interactive Games, Ex. = Expenditure, + = significantly positive, - = significantly negative, 0 = non-significant, na = not available

A similar procedure to that applied in the previous section will be followed: the results obtained in our analysis of the behaviour of tourists visiting Leipzig will be compared with those obtained in a similar study for the city of Amsterdam (see Neuts et al., 2012). Important differences can be observed, as expected, considering the different characteristics of the visitors and the destinations:

- although e-forums, virtual tours and interactive games were not important for higher educated visitors in both cities, in Amsterdam it was found that this group pays special attention to interactive mapping and electronic booking services, which does not happen in Leipzig;
- while tourists visiting Leipzig or Amsterdam for holidays tended to give importance to interactive maps in both destinations, only in Leipzig this group was also favorably inclined towards e-forums and virtual tours;
- in both cases, older tourists tend to use less e-services than the youngest generations, as could be expected;

- higher income levels are related to the usage of electronic journey planners in Amsterdam and to online booking services in Leipzig;
- male travelers visiting Amsterdam attach particular importance to virtual tours and interactive games, while female tourists in Leipzig use more online booking services;
- domestic (Dutch) tourists visiting Amsterdam tend to use less e-services, while those travelling to Leipzig (German) tend to plan their trips with journey planners.

Regarding the relations between the characteristics of tourists, usage of e-services and level of expenditures in these two cities, it was observed that:

- virtual tours lead to higher expenditure levels in both cities;
- e-forums are used by those tourists who spend less money in Amsterdam (probably because they are used to find affordable services, like accommodation), while electronic booking services are used by the tourists who spend more money in Leipzig (probably because they are also those with higher income level);
- income is positively related to expenditures in both cities;
- national visitors tend to spend less than foreigners, which might be related to the amount of day visitors in this tourist segment;
- higher education is related to lower levels of expenditures in Amsterdam (possibly because of the importance of university students in this group); in contrast, the education level is not directly significantly related to the level of expenses in Leipzig;

According to our results on e-services, a few general tendencies can be identified. The heterogeneity of these behaviours regarding the different e-services and considering the different characteristics of the tourists, enhances the importance of developing specific channels and information contents for specific market segments.

5. Concluding Remarks

From the point of view of urban planning, the most important result of this study is that, for both urban destinations, satisfaction with intangible aspects of the city has a positive correlation with the loyalty of tourists – their willingness to repeat the visit or to recommend the city to friends. In fact, loyalty is an extremely important question for tourism marketing, as it constitutes a "free-of-charge" and extremely reliable form of promotion. Loyal tourists do not need to be convinced by promotional campaigns and their knowledge about the cities tends to improve the quality of their visits in the future.

Consequently, planning tourism development in contemporary cities implies a comprehensive approach to the different aspects of urban life that contribute to a pleasant environment (mobility, safety, pollution or services) in a similar way as it affects daily life of residents. This implies that the performance of a city as a tourism destination does not rely only on the quality of the tourist attractions (museums, parks, accommodation or food) or on other services that are required for tourists and residents (transport, shopping, night life), but also – and apparently more importantly – on the way tourists can enjoy all these amenities with a pleasant atmosphere.

Other common aspects identified in this study – and also relevant for urban planning – are the fact that older and higher educated tourists are less motivated by popular consumption (e.g., shopping or night life). This emphasizes the importance of other attractions (like culture) in cities where this segment of the market is considered interesting. As higher educated tourists were found to be more loyal in both case cities, this aspect should be considered in strategies for tourism development. On the other hand, it also appears that tourists motivated by the cultural aspects of the destinations achieved higher levels of satisfaction from both tangible and intangible elements of the cities.

The aspects related to the use of e-services by tourists have less direct impacts on urban planning, but it should be stressed that visitors with holiday purposes tend to use more interactive maps in both destinations, which suggests the importance they attach to clear and precise information about locations. It is plausible to expect that these tourists will prefer to find the same easy and precise information, when they visit these cities. On the other hand, it was also shown that tourists using virtual tours before the travel tend to have higher expenditures, enhancing the importance of the development of these pre-travel information tools to promote the cities.

Clearly, our study has also shown that most of the relations under analysis in both models (regarding motivations, satisfaction and loyalty and regarding the relation between e-services and the level of expenditures) did not provide identical results for these two cities, as is expressed in Tables 4 and 5. This emphasizes the heterogeneity of tourism destinations, whose performance depends on the specific amenities and services provided in each place and on the particular characteristics of the visitors they attract. This means that the singularity of each city – the specific characteristics making them distinct in a global competitive market – implies distinct processes of urban planning, development of different aspects of the city, and aclear focus on alternative or complementary segments of the tourist market. In fact, this singularity is the major challenge for urban tourism development and marketing today.

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